No. 9500037

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9472'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of May in the year of our Lord one thousand nine hundred and ninety-six.*

Attest:

Marsha A. Stamm
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Dan Glickman
Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and edition date on all reproductions.* OMB APPROVED NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.

3. VARIETY NAME
9472

4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)
700 Capital Square
400 Locust St.
Des Moines, IA 50309

5. PHONE (include area code)
(515)270-3582

FOR OFFICIAL USE ONLY

PVPO NUMBER
9500037

FILING
Date
NOVEMBER 8, 1994
Time
☐ A.M. ☑ P.M.

FEES RECEIVED
Filing and Examination Fee:
$ 2325.00
Date
OCTOBER 27, 1994
Certificate Fee:
$ 300.00
Date
5-6-96

6. GENUS AND SPECIES NAME
Glycine max

7. FAMILY NAME *(Botanical)*
Leguminosae

8. CROP KIND NAME *(Common Name)*
Soybean

9. DATE OF DETERMINATION
October 1987

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

John Grace
7300 NW 62nd Ave.
PO Box 1004
Johnston, IA 50131-1004

Mike Roth (copy)
700 Capital square, 400 Locust St.
Des Moines, IA 50309

PHONE (include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow* INSTRUCTIONS *on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety
b. ☒ Exhibit B, Novelty Statement
c. ☒ Exhibit C, Objective Description of Variety
d. ☒ Exhibit D, Additional Description of Variety
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 10/28/94
g. ☒ Filing and Examination Fee ($2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act)* ☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date. _____).
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) _____
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE
D. John Grace, III	Soybean Research Coordinator	10/21/94
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

SD-470 (06-93) *Editions of Forms LS-470 (3/86) and CSSD-470 (5/89) are to be destroyed.*

CONTINUED ON REVERSE

Attachment: 9472 Soybean (October, 1994)

Exhibit A:

Variety 9472 evolved from a cross of A4595/A4009. It is an F6-derived variety which was advanced to the F6 generation by modified single-seed descent. The F6 progeny row of 9472 was grown in the summer of 1987. Subsequently, 9472 has undergone six years of extensive testing, and has been observed to be stable for all plant traits from generation to generation.

2 acres of 9472 (breeders seed) were grown in 1992. 85 acres of parent seedstock (foundation seed equivalent) were grown in 1993.

Exhibit B:

Variety 9472 most closely resembles the varieties 9451, A4715, A4539 and CX469C. However, 9472 is significantly later than 9451 (see Table 1), significantly earlier than A4715 (see Table 2), and significantly taller than A4539 (see Table 3). In addition, variety 9472 has white flowers whereas CX469C has purple flowers.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.		9472

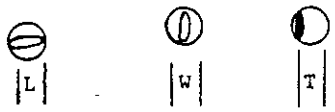
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
700 Capital Square
400 Locust St.
Des Moines, IA 50309

FOR OFFICIAL USE ONLY
PVPO NUMBER
9500037

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][7] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[6] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[2] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

3

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[1] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[2] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][7] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [1] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [1] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

4

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [1] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[1] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [2] Race 2 [1] Race 3 [0] Race 4 [1] Race 5 [0] Race 6 [1] Race 7

[0] Race 8 [1] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[1] Bud Blight (Tobacco Ringspot Virus)

[1] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [1] Cowpea Mosaic (Cowpea Chlorotic Virus)

[1] Pod Mottle (Bean Pod Mottle Virus)

★ [1] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [2] Race 3 [0] Race 4 [2] Other *(Specify)* Race 14

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[0] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[ ] Mexican Bean Beetle *(Epilachna varivestis)*

[ ] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	CX469C	Seed Coat Luster	A4539
Leaf Shape	A4539	Seed Size	A4539
Leaf Color	A4539	Seed Shape	A4539
Leaf Size	A4539	Seedling Pigmentation	A4539

5

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9472 Submitted	126.7	2.6	101			42.0	22.4		
CX469C Name of Similar Variety	127.7	2.2	104			42.2	21.5		

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit D:

In Exhibit C we have identified 9472 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle, seed mottle, and iron chlorosis. This does not mean that we consider 9472 to be worse than other varieties of similar maturity in reaction to these challenges. Rather, we do not consider 9472 to be immune to them. Therefore, we have chosen to be conservative and have identified 9472 as "susceptible".

Table 8. Isozyme information for 9472

ACO2	ACO3	ACO4	ACP	ENP	IDH2	MDH	MPI	PGM1
1	1	1	A	A	1	B	A	1

9472 is a mid-late group IV variety. If group IV varieties are divided into tenths, the relative maturity of 9472 is 4.7.

Exhibit E.

Variety 9472 was originated and developed by plant breeders from whom, by agreement, Pioneer Hi-Bred International, Inc. has obtained exclusive rights to protect and market variety 9472. No rights to such invention, discovery, or development are retained by the plant breeders or by any other party.

Table 1. 9472 versus 9451 for maturity.

Observations are from plots planted using a randomized complete block design. Planted plot length was twentyone feet, trimmed to fifteen feet. Plot width was four thirty inch rows, or ten feet Maturity was scored as the number of days from planting until 95% of the pods in the plot were mature. Data was taken in the years specified.

1992									
	9472	9451							
REP	X1	X2	X1-X2	(X1-X2)**2	SD**2=	(98.19 - (22.3**2)/6)/(6 * 5)			
1	134	131	3	9	=	0.51			
2	147.5	142.5	5	25	SD =	0.71			
3	142.5	141	1.5	2.25	t=	3.72/0.71			
4	151	147	4	16		5.20	** significant, 0.01 level		
5	137	134.5	2.5	6.25	df=	5			
6	129.3	123	6.3	39.69					
					n=	6	groups of individuals		
					ave 9472	140.22	days		
					ave 9451	136.50	days		
	841.30	819.00	22.30	98.19					
	140.22	136.50	3.72						

1993									
	9472	9451							
REP	X1	X2	X1-X2	(X1-X2)**2	SD**2=	(312.06- (65**2)/20)/(20 * 19)			
1	136	131.5	4.5	20.25	=	0.27			
2	130	128.5	1.5	2.25	SD =	0.52			
3	132	128	4	16	t=	3.25/0.52			
4	129	128	1	1		6.31	** significant, 0.001 level		
5	134	126	8	64	df=	19			
6	129	128	1	1					
7	134	125	9	81	n=	20	groups of individuals		
8	137	135	2	4					
9	136	134	2	4	ave 9472	128.35	days		
10	136	134	2	4	ave 9451	125.10	days		
11	136.5	133	3.5	12.25					
12	141	135.5	5.5	30.25					
13	122.3	119	3.3	10.89					
14	127.3	122.7	4.6	21.16					
15	115	115	0	0					
16	115	113	2	4					
17	115	111	4	16					
18	123.5	120	3.5	12.25					
19	122	121	1	1					
20	116.3	113.7	2.6	6.76					
	2566.90	2501.90	65.00	312.06					
	128.35	125.10	3.25						

Combined 1992 and 1993 data										
	9472	9451								
REP	X1	X2	X1-X2	(X1-X2)**2		SD**2=	(410.25 - (87.3**2)/26)/(26 * 25)			
						=	0.18			
						SD =	0.42			
						t=	3.36/0.42			
							7.91	** significant, 0.001 level		
						df=	25			
						n=	26	groups of individuals		
	3408.20	3320.90	87.30	410.25		ave 9472	131.08	days		
	131.08	127.73	3.36			ave 9451	127.73	days		

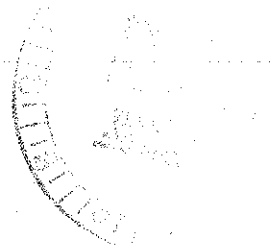


Table 2. 9472 versus A4715 for maturity.

Observations are from plots planted using a randomized complete block design. Planted plot length was twentyone feet, trimmed to fifteen feet. Plot width was four thirty inch rows, or ten feet Maturity was scored as the number of days from planting until 95% of the pods in the plot were mature. Data was taken in 1993.

	9472	A4715							
REP	X1	X2	X1-X2	(X1-X2)**2	SD**2=	(193.21- (47.5**2)/21)/(21 * 20)			
1	137.3	139.5	-2.2	4.84	=	0.20			
2	121.7	127.7	-6	36	SD =	0.45			
3	136	137	-1	1	t=	-2.26/0.45			
4	136.5	136.5	0	0		-5.01	** significant, 0.001 level		
5	141	142	-1	1	df=	20			
6	122.5	125	-2.5	6.25					
7	115	116.3	-1.3	1.69	n=	21	groups of individuals		
8	122.5	124	-1.5	2.25					
9	113.7	115	-1.3	1.69	ave 9472	120.99	days		
10	127.3	128	-0.7	0.49	ave A471	123.25	days		
11	111	115	-4	16					
12	119	119	0	0					
13	109	115	-6	36					
14	111	117	-6	36					
15	113	115	-2	4					
16	115	119	-4	16					
17	121	122	-1	1					
18	115	115	0	0					
19	115	117	-2	4					
20	122	127	-5	25					
21	116.3	116.3	0	0					
	2540.80	2588.30	-47.50	193.21					
	120.99	123.25	-2.26						

Table 3. 9472 versus A4539 for height.

Observations are from plots planted using a randomized complete block design. Planted plot length was twentyone feet, trimmed to fifteen feet. Plot width was four thirty inch rows, or ten feet Maturity was scored as the number of days from planting until 95% of the pods in the plot were mature. Data was taken in 1993.

	9472	A4539							
REP	X1	X2	X1-X2	(X1-X2)**2	SD**2=	(264- (38**2)/6)/(6 * 5)			
1	48	42	6	36	=	0.78			
2	47	42	5	25	SD =	0.88			
3	49	40	9	81	t=	6.33/0.88			
4	42	38	4	16		7.18	** significant, 0.001 level		
5	44	35	9	81	df=	5			
6	40	35	5	25					
					n=	6	groups of individuals		
					ave 9472	45.00	inches		
					ave A453	38.67	inches		
	270.00	232.00	38.00	264.00					
	45.00	38.67	6.33						